Open Science Grid

A closer look at the VDT RPMs

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Open Science Grid

Hands-on?

- This is supposed to be a 30 minute hands-on tutorial
- I have *no idea* how to do a hands-on in 30 minutes.
- So I'm going to walk you through the process instead.
- I'll do the CE
  - Because it illustrates the most
  - **For today, you're better off with the worker node or client**

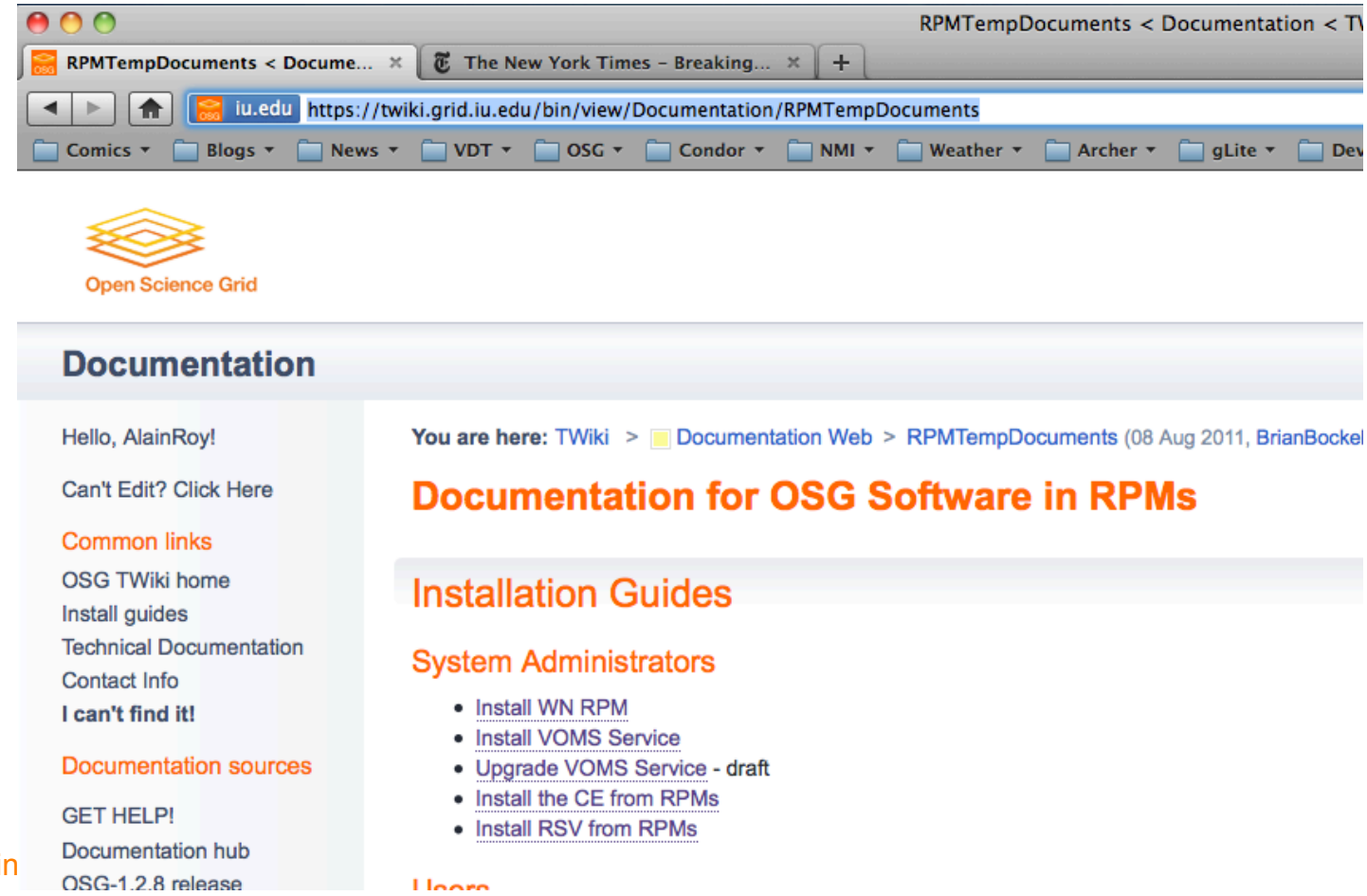
That said…

- I really want you to try this! We need feedback!
- Are any of you willing to do a trial test with RPMS?
- Please? Pretty please?

Online instructions

You can read instructions online:

`twiki.grid.iu.edu/bin/view/Documentation/RPMTempDocuments`



Prerequisites

- RHEL-5 like computer
  - We've only tested Scientific Linux 5
- Recommend a non-production M or VM for now
- Willing to use EPEL
- Willing to not to use dag or rpmforge

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A quick note…

- I edited the screenshots so I could put them in a large font size, particularly some word wrap & abbreviations
- Please ask if there is any confusion.

1. Install the EPEL yum repo info

Download & install one RPM:

```
% wget http://download.fedoraproject.org/pub/epel/5/
        i386/epel-release-5-4.noarch.rpm
...
Saving to: `epel-release-5-4.noarch.rpm.1'
100%[==============================>] 12,232 --.-K/s in 0.1s
```

```
% sudo rpm -i epel-release-5-4.noarch.rpm
warning: epel-release-5-4.noarch.rpm:
  Header V3 DSA signature:
  NOKEY, key ID 217521f6
```

2. Install the VDT yum repo info

Download & install one RPM:

```
% sudo rpm -Uvh
        http://vdt.cs.wisc.edu/repos/3.0/el5/development/
        x86_64/osg-release-3.0-3.noarch.rpm
Retrieving http://vdt.cs.wisc.edu/repos/3.0/el5/ ...
Preparing...      ########################################## [100%]
   1:osg-release  ########################################## [100%]
```

Check: do you have the repos?

```
% ls /etc/yum.repos.d/epel* /etc/yum.repos.d/osg*

epel.repo
osg.repo
osg-development.repo
osg-testing.repo
```

Check: What's the OSG repo like?

```
% cat /etc/yum.repos.d/osg-testing.repo
[osg-testing]
name=OSG Software for EL 5 - Testing - $basearch
baseurl=http://vdt.cs.wisc.edu/repos/.../testing/$basearch
failovermethod=priority
priority=98
enabled=0

[osg-testing-source]
name=OSG Software for EL 5 - Testing - $basearch - Source
baseurl=http://vdt.cs.wisc.edu/repos/3.0/el5//testing/src
failovermethod=priority
priority=98
enabled=0
```

3. Choose what to install

Your heart's desire	Package Name
Worker Node	osg-wn-client
Client	osg-client
VOMS	osg-voms
RSV	rsv
Compute Element—Condor	osg-ce-condor
Compute Element—PBS/Torque	osg-ce-pbs
Compute Element—LSF	osg-ce-lsf
Compute Element—SGE	osg-ce-sge

Good first choices

CE packages are individualized:

- Installs appropriate Globus GRAM job manager
- Installs appropriate Gratia probes

4. Let's install the CE (Bleeding Edge!)

```
% sudo yum --enablerepo=osg-testing \
           --nogpgcheck install osg-ce-condor
Loaded plugins: kernel-module
osg-testing                              | 1.9 kB     00:00
...
---> Package osg-ce-condor.noarch 0:3.0.0-4 to be updated
--> Processing Dep: osg-ce=3.0.0-4 for: osg-ce-condor
--> Processing Dep: gratia-probe-condor for: osg-ce-condor
...
================================================================
Package              Arch   Version   Repository     Size
```

Note the use of both EPEL and OSG repository.

```
Installing for dependencies:
...
globus-authz       x86_64 0.7-4.el5  epel           13 k
globus-gatekeeper  x86_64 5.7-6.osg  osg-testing    38 k
```

5. Let's configure it!

Note: configuration in /etc/osg:

```
% rpm -qf /etc/osg/ce.ini
osg-configure-0.5.0-1.el5.noarch
```

```
% ln -s /etc/osg/ce.ini /etc/osg/config.ini
```

```
% vi /etc/config.ini
```

```
% configure-osg -v -d
Configuration verified successfully
```

```
% configure-osg -c
Configure-osg completed successfully
```

6. Let's keep on configuring it

```
% /usr/share/globus/setup/setup-globus-gatekeeper
Creating gatekeeper configuration file...
Done
Creating grid services directory...
Done
```

```
% /usr/share/globus/setup/setup-globus-gram-job-manager
Creating state file directory.
Done.
Checking if state dir. supports POSIX file locking... yes
Reading gatekeeper configuration file...
Determining system information...
Creating job manager configuration file...
Done
```

```
% /usr/share/globus/globus-job-manager-service
  -add -s jobmanager-fork -m fork
```

7. Great! Let's run a job!

```
% /sbin/servi
Starting glob                                  as daemon,
ignoring -ine
GRAM contact:                                  org/
DC=doegrids/O                                  gov

[   OK   ]
```

```
% grid-proxy-
Your identity
Enter GRID pa
Creating prox                                  ..... Done
Your proxy is                                  2011
```

```
% globusrun -

GRAM Authenti
```

Move to FHS

- No more `$VDT_LOCATION`
- No more `$GLOBUS_LOCATION`
- Everything is in FHS locations:

```
% which grid-proxy-init
/usr/bin/grid-proxy-init
```

```
% which globus-gatekeeper
/usr/sbin/globus-gatekeeper
```

More FHS locations

```
% head -2 /var/log/globus-gatekeeper.log
TIME: Sun Aug  7 23:38:07 2011
PID: 21219 -- Notice: 6: /usr/sbin/globus-gatekeeper
pid=21219 starting at Sun Aug  7 23:38:07 2011
```

```
% head -2 /etc/vomses
"cdf" "voms.fnal.gov" "15020" "/DC=org/DC=doegrids/
OU=Services/CN=http/voms.fnal.gov" "cdf"
"cdf" "voms.cnaf.infn.it" "15001" "/C=IT/O=INFN/OU=Host/
L=CNAF/CN=voms.cnaf.infn.it" "cdf"
```

We can validate VOMS certificates:

```
% ls -1 /etc/grid-security/vomsdir/
atlas/
belle/
cdf/
```

What about jobs?

- Jobs expect there to be `$OSG_GRID/setup.sh`. Where's that at?

```
% cat/etc/osg/wn-client/setup.sh
#!/bin/sh

# You no longer need to source /setup.sh
# However, this file has been left for backward
# compatibility purposes.
```

- Jobs don't need to set the environment, but if you set `$OSG_GRID` to `/etc/osg/wn-client`, jobs will source it and not fail.

Goodbye PRIMA

- We don't ship PRIMA with the RPMs.
- If you want to use GUMS, you use lcmaps (software underlying glexec)
- Connection from Globus to lcmaps:

```
% cat /etc/grid-security/gsi-authz.conf
globus_mapping //usr/lib64/liblcas_lcmaps_gt4_mapping.so lcmaps_callout
```

- Edit gums server in two files:
  - `/etc/lcmaps.db`
  - `/etc/gums/gums-client.properties`

Globus 5

- We are using Globus from EPEL
- EPEL provides Globus 5.0.4
- This means:
  - We need to do plenty of compatibility testing
  - Web-services GRAM is gone
- There is some uncertainty about Globus 5.0.x vs. 5.2.x
  - This is being resolved now… More news soon

Questions? Comments?